

third router 716 in the first cluster 702 is also connected to a third router 734 in the third cluster 706 through metarouter 709. Likewise, the dash/dot lines in FIG. 7 represent the connections between a fourth router 718 in the first cluster 702 and each one of the other clusters. The fourth router 718 [710] in the first cluster 702 is connected to a fourth router 728 in the second cluster 704 through metarouter 711. The fourth router 718 [710] in the first cluster 702 is also connected to a fourth router 736 in the third cluster 706 through metarouter 711.

IN THE CLAIMS

Please substitute the claim set in the appendix entitled Clean Version of Pending Claims for the previously pending claim set. The substitute claim set is intended to reflect amendment of previously pending claims 1 and 6, and addition of new claims 7-20. The specific amendments to individual claims are detailed in the following marked up set of claims.

1. [Amended] A massively parallel processing system comprising:

a plurality of processing element nodes;

a scalable interconnection network comprising:

a plurality of physical communication links; and

a plurality of first level routers for interconnecting the plurality of processing element nodes in a cluster; and

one or more metarouters for interconnecting the plurality of first level routers so that each one of the first level routers in a first cluster is connected to all other clusters through one or more metarouters[.]

wherein if one of the metarouters is coupled to one of the first level routers, then the one of the metarouters is also coupled to less than two other metarouters, otherwise the one of the metarouters is coupled to two metarouters.

6. [Amended] A massively parallel processing system comprising:

a plurality of processors;

a first set of routers for interconnecting the plurality of processors as two-dimensional

hypercubes; and

a second set of routers for interconnecting the first set of routers wherein the hypercubes remain [in tack] intact as the system is expanded[.]

and wherein less than all of the routers in the second set of routers are coupled to a router in the first set of routers.

7. [New] A scalable multiprocessor network for connecting a plurality of processing element nodes, the scalable multiprocessor network comprising:

a first set of routers for interconnecting a plurality of processing element nodes as n-dimensional hypercubes; and

a second set of routers for interconnecting the first set of routers wherein the n-dimensional hypercubes remain intact as additional processing element nodes are added to the multiprocessor network and wherein less than all of the routers in the second set of routers are coupled to a router in the first set of routers.

8. [New] The scalable multiprocessor network of claim 7, wherein the scalable multiprocessor network connects 129 to 160 processing element nodes.

9. [New] The scalable multiprocessor network of claim 7, wherein the scalable multiprocessor network connects 161 to 192 processing element nodes.

10. [New] The scalable multiprocessor network of claim 7, wherein the scalable multiprocessor network connects 193 to 224 processing element nodes.

11. [New] The scalable multiprocessor network of claim 7, wherein the scalable multiprocessor network connects 225 to 256 processing element nodes.

12. [New] The scalable multiprocessor network of claim 7, wherein the scalable multiprocessor network connects up to 288 processing element nodes.

13. [New] The scalable multiprocessor network of claim 7, wherein the scalable multiprocessor network connects up to 320 processing element nodes.

14. [New] The scalable multiprocessor network of claim 7, wherein the scalable multiprocessor network connects up to 352 processing element nodes.

15. [New] The scalable multiprocessor network of claim 7, wherein the scalable multiprocessor network connects up to 384 processing element nodes.

16. [New] The scalable multiprocessor network of claim 7, wherein the scalable multiprocessor network connects up to 416 processing element nodes.

17. [New] The scalable multiprocessor network of claim 7, wherein the scalable multiprocessor network connects up to 448 processing element nodes.

18. [New] The scalable multiprocessor network of claim 7, wherein the scalable multiprocessor network connects up to 480 processing element nodes.

19. [New] The scalable multiprocessor network of claim 7, wherein the scalable multiprocessor network connects up to 512 processing element nodes.

20. [New] The scalable multiprocessor network of claim 7, wherein the scalable multiprocessor network connects more than 512 processing element nodes.

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on February 26, 2002, and the references cited therewith.

Claims 1 and 6 are amended, no claims are canceled, and claims 7-20 added; as a result, claims 1-20 are now pending in this application. The amendments to the claims and the new